



AMENDMENTS

Please amend the claims as follows:

Claims 1-51 (canceled)

52. (New) A method of making a nanocomposite, said method comprising:

providing an inorganic material having a layered structure and solvent

molecules trapped in or associated within said layered structure;

providing an emulsion of at least one molten polymer; and

combining said inorganic material with said molten polymer such that said

combining causes rapid vaporization of said solvent molecules,

causing nanoscale exfoliation of said inorganic material.

53. (New) The method of claim 52, wherein said inorganic material is selected from the group consisting of hydrotalcites, clays and micas.

54. (New) The method of claim 52, wherein said inorganic material is a synthetic hydrotalcite intercalated with an organic compound.

55. (New) The method of claim 52, wherein said hydrotalcite is amino-acid intercalated hydrotalcite.

56. (New) The method of claim 55, wherein said amino-acid is aminobutyric acid.

57. (New) The method of claim 55, wherein said amino-acid is aminocaproic acid.

58. (New) The method of claim 52, wherein said polymer is selected from polypropylenes, polyethylenes, polybutadienes, polystyrenes, high impact polystyrenes, styrene acrylonitriles, acrylonitrile-butadienestyrenes, polyethylene terephthalates, polybutylene terephthalates, styrene butadiene rubbers, butyl rubbers, nitrobutyl rubbers, polycarbonates, dynamically cross-linked thermoplastic olefin polymers, polyurethanes and nylons.

59. (New) The method of claim 52, wherein said polymer is polypropylene.

60. (New) The method of claim 59, wherein said polypropylene is a modified polypropylene.
61. (New) The method of claim 60, wherein said modified polypropylene is a maleated polypropylene.
62. (New) The method of claim 60, wherein said modified polypropylene is modified with glycidyl methacrylate.
63. (New) The method of claim 52, wherein said solvent is water.
64. (New) The method of claim 52, wherein said solvent is an alcohol.
65. (New) The method of claim 64, wherein said alcohol is selected from methanol, ethanol, n-propanol, i-propanol, n-butanol, i-butanol.
66. (New) The method of claim 52, wherein said solvent is a ketone selected from acetone or methyl ethyl ketone.
67. (New) The method of claim 52, wherein said step of combining is accomplished by an extruder.
68. (New) A method of making a nanocomposite, said method comprising:
 - providing an amino acid intercalated hydrotalcite having a layered structure
 - when in a dry state;
 - providing an emulsion of at least one molten polymer; and
 - combining said amino acid intercalated hydrotalcite in a dry state with said emulsion comprising at least one molten polymer to make said nanocomposite such that nanoscale exfoliation of said amino acid intercalated hydrotalcite is established and maintained.
69. (New) The method of claim 68, wherein said amino-acid is aminobutyric acid.
70. (New) The method of claim 68, wherein said amino-acid is aminocaproic acid

71. (New) The method of claim 68, wherein said step of combining is accomplished by an extruder.

72. (New) The method of claim 68, wherein said polymer is selected from polypropylene, polyethylene, polybutadiene, polystyrene, high impact polystyrene, styrene acrylonitrile, acrylonitrile-butadienestyrene, polyethylene terephthalate, polybutylene terephthalate, styrene butadiene rubber, butyl rubber, nitrobutyl rubber, polycarbonate, dynamically cross-linked thermoplastic olefin polymers, polyurethane and nylon.

73. (New) The method of claim 68, wherein said polymer is polypropylene.

74. (New) The method of claim 73, wherein said polypropylene is a modified polypropylene.

75. (New) The method of claim 74, wherein said modified polypropylene is a maleated polypropylene.

76. (New) The method of claim 74, wherein said modified polypropylene is modified with glycidyl methacrylate.

77. (New) A method of making a nanocomposite, said method comprising:
providing an amino acid intercalated hydrotalcite, said amino acid intercalated hydrotalcite having a layered structure when in a dry state;
adding said amino acid intercalated hydrotalcite to a solvent to form a suspension, slurry or paste to induce exfoliation of said amino acid intercalated hydrotalcite;
providing an emulsion of at least one molten polymer; and
combining said exfoliated amino acid intercalated hydrotalcite with said emulsion comprising at least one molten polymer to make said nanocomposite such that nanoscale exfoliation of said exfoliated amino acid intercalated hydrotalcite is maintained.

78. (New) The method of claim 77, wherein said solvent is water.
79. (New) The method of claim 77, wherein said solvent is an alcohol.
80. (New) The method of claim 79, wherein said alcohol is selected from methanol, ethanol, n-propanol, i-propanol, n-butanol, i-butanol.
81. (New) The method of claim 77, wherein said solvent is a ketone selected from acetone or methyl ethyl ketone.
82. (New) The method of claim 77, wherein said step of combining is accomplished by an extruder.
83. (New) The method of claim 77, wherein said amino-acid is aminobutyric acid.
84. (New) The method of claim 77, wherein said amino-acid is aminocaproic acid.
85. (New) The method of claim 77, wherein said polymer is selected from polypropylene, polyethylene, polybutadiene, polystyrene, high impact polystyrene, styrene acrylonitrile, acrylonitrile-butadienestyrene, polyethylene terephthalate, polybutylene terephthalate, styrene butadiene rubber, butyl rubber, nitrobutyl rubber, polycarbonate, dynamically cross-linked thermoplastic olefin polymers, polyurethane and nylon.
86. (New) The method of claim 77, wherein said polymer is polypropylene.
87. (New) The method of claim 86, wherein said polypropylene is a modified polypropylene.
88. (New) The method of claim 87, wherein said modified polypropylene is a maleated polypropylene.
89. (New) The method of claim 87, wherein said modified polypropylene is modified with glycidyl methacrylate.